LPWAN WG

WG Chairs:
Alexander Pelov <a@ackl.io>
Pascal Thubert <pthubert@cisco.com>

AD: Suresh Krishnan
<suresh@kaloom.com>
Any submission to the IETF intended by the Contributor for publication as all or part of an IETF Internet-Draft or RFC and any statement made within the context of an IETF activity is considered an "IETF Contribution". Such statements include oral statements in IETF sessions, as well as written and electronic communications made at any time or place, which are addressed to:

- The IETF plenary session
- The IESG, or any member thereof on behalf of the IESG
- Any IETF mailing list, including the IETF list itself, any working group or design team list, or any other list functioning under IETF auspices
- Any IETF working group or portion thereof
- Any Birds of a Feather (BOF) session
- The IAB or any member thereof on behalf of the IAB
- The RFC Editor or the Internet-Drafts function

All IETF Contributions are subject to the rules of RFC 5378 and RFC 3979 (updated by RFC 4879).

Statements made outside of an IETF session, mailing list or other function, that are clearly not intended to be input to an IETF activity, group or function, are not IETF Contributions in the context of this notice. Please consult RFC 5378 and RFC 3979 for details.

A participant in any IETF activity is deemed to accept all IETF rules of process, as documented in Best Current Practices RFCs and IESG Statements.

A participant in any IETF activity acknowledges that written, audio and video records of meetings may be made and may be available to the public.
Reminder:

Minutes are taken *
This meeting is recorded **
Presence is logged ***

* Scribe; please contribute online to the minutes at: http://etherpad.tools.ietf.org:9000/p/lpwan
** Recordings and Minutes are public and may be subject to discovery in the event of litigation.
*** From the Webex login
Agenda bashing

16:05> Opening, agenda bashing (Chairs) [10min]
  • Note-Well, Scribes, Agenda Bashing
  • Approval minutes from last meeting
  • Review last interim todos
  • Terminology

16:15> LPWAN Overview Presentation and Discussion (Stephen Farrel) [5min]
  • https://datatracker.ietf.org/doc/draft-ietf-lpwan-overview/
  • WGLC

16:20> Static Context Header Fragmentation (Carles) [15min]
  • https://datatracker.ietf.org/doc/draft-ietf-lpwan-ipv6-static-context-hc/

16:35> Static Context Header Compression for IPv6 and UDP (Ana, Laurent) [15min]
  • https://datatracker.ietf.org/doc/draft-ietf-lpwan-ipv6-static-context-hc/

16:50> LPWAN Static Context Header Compression (SCHC) for CoAP (Laurent) [5min]

16:55> New Items (Ana) [5min]

17:00> AOB [QS]
Status

WG formed October 14th

• Charter item #1  (Informational document)
  – Baseline technology description

• Charter item #2  (Standards track document)
  – Enable the compression and fragmentation of a CoAP/UDP/IPv6 packet over LPWA networks
# Charter - Milestones

## Milestones

<table>
<thead>
<tr>
<th>Date</th>
<th>Milestone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jul 2017</td>
<td>Submit CoAP compression mechanism to the IESG for publication as a Proposed Standard</td>
</tr>
<tr>
<td>May 2017</td>
<td>Submit IP/UDP compression and fragmentation mechanism to the IESG for publication as a Proposed Standard</td>
</tr>
<tr>
<td>Apr 2017</td>
<td>Submit LPWAN specification to the IESG for publication as an Informational Document</td>
</tr>
<tr>
<td>Done</td>
<td>Adopt CoAP compression mechanism as a WG item</td>
</tr>
<tr>
<td>Done</td>
<td>Adopt IP/UDP compression and fragmentation mechanism as a WG item</td>
</tr>
<tr>
<td>Done</td>
<td>Adopt LPWAN specifications as WG item</td>
</tr>
</tbody>
</table>

Interim, June 7\textsuperscript{th}, 2017
Last meeting Action items

- JCZ, DD: Review IP/UDP drafts
- CB, MV: Review CoAP draft
- SF: Send revision, WG to review by May 30th
- CG: CFN/AFN, new ideas around fragmentation
- CG: Default fragmentation mode (Window mode)
LPWAN Overview

Editor: Stephen Farrell
(many contributors)
Terminology

- All things fixed – ready for WG call
LPWAN SCHC Fragmentation

Authors:
Ana Minaburo <ana@ackl.io>
Laurent Toutain <laurent.toutain@imt-atlantique.fr>
Carles Gomez <carlesgo@entel.upc.edu>
Status

• Updates since the last interim (24\textsuperscript{th} May)

• Available at https://github.com/lp-wan/ip-compression

• Thanks for the input/feedback!
Updates (I/II)

• Packet mode now extracted from SCHC document
  – Now: No ACK, Window mode (ACK “always” and on error)

• Bitmap size lower than $2^N / 8$ bytes allowed
  • E.g. $N=6$ bits, bitmap size of 56 bits (Note: $N$ is the CFN size)

• Multiple window sizes can be supported
  • E.g. to reduce bitmap size to the minimum required for a small packet
  • Via Rule ID
Updates (II/II)

- Updates based on comments by Diego
  - New “Tools” subsection
  - List of Rule IDs used for fragmentation added
    - A fragment, and reliability option
      - No ACK, Window mode – ACK “always”, Window mode – ACK on error
    - An ACK
    - Abort (Tx, Rx, all on-going transmissions)
  - Several minor editorial and technical updates
Thanks!

Comments?

Authors:
Ana Minaburo <ana@ackl.io>
Laurent Toutain <laurent.toutain@imt-atlantique.fr>
Carles Gomez <carlesgo@entel.upc.edu>
SCHC Compression

draft-ietf-lpwan-ipv6-static-context-hc-03

Authors:
Ana Minaburo ana@ackl.io
Laurent Toutain laurent.toutain@imt-atlantice.fr
Carles Gomez carlesgo@entel.upc.edu
Terminology and Architecture

• Question
  – LPWAN Overview is Informational
  – IP/UDP SCHC is Standard track

• Copy necessary parts on Terminology and Architecture?
SCHC Compression

- Juan Carlos Zuniga review’s
  - IID for IPv6 address only ID
    - IPv6 address composed: 64 bit global prefix + 64 bits for Interface Identifier (IID) => (Network Part + Host Part)
      - The IID can be based on:
        - MAC @
        - L2 Identifier
        - Random number
        - Static number
        - IPv4@ ++
SCHC Compression

• Security Part of the draft
  – Do we do 2 parts or only one?
  – For Header Compression:
    • A malicious header compression could cause the reconstruction of a wrong packet that does not match with the original one, such corruption may be detected with end-to-end authentication and integrity mechanisms.
    • Denial of Service may be produced but its arise other security problems that may be solved with or without header compression.
    • More?
LPWAN CoAP SCHC

Authors:
Ana Minaburo <ana@ackl.io>
Laurent Toutain <laurent.toutain@imt-atlantique.fr>
Pretty stable

• CoRE Analysis
  – Security section

• Reviewers!!
  – Need feedback
Next steps for WG

Authors:
Ana Minaburo <ana@ackl.io>
Next steps

• YANG data modeling for SCHC
• Profile Technologies. Develop the different document for each technology in order to define the different parameters.
• Security, all the security solution for the LPWAN
• Rules-ID’s management
  – Use to identify some specific cases:
    • Fragmentation
    • Format Values
    • Rule-IDs dedicated for some specific cases as CBOR structure representation, fragmentation, etc
  – The way to use the Rule-Id and their configuration
• ICMP Compression